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(71) Applicants
W. Lathaby & Co. Ltd.,
Central Way, Andover,
Hampshire SP10 5AL

(72) Inventor
Christopher Carmichael
Thomas

(74) Agents
A. A. Thornton & Co.,
Northumberland House,
303—306 High Holborn,
London WC1V 7LE

(54) Transaction device

(57) A transaction device which is a pocket-size portable electronic device capable of storing therein data representing a money value and of transferring to or from like devices or other terminals data representing selected sums of money in one or a

number of transactions, the stored data being up-dated at each transaction to represent the up-dated money value. The device includes a keyboard with numerical and function keys, a visual display and a data input/output socket, is microprocessor controlled and may be powered by solar cells.

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SPECIFICATION

Transaction device

This invention relates to a device for effecting financial transactions between the use and another party or other parties.

The transaction device is a portable device capable of storing a predetermined money value issued to it, and then of transferring to or from like devices (or appropriate other devices or terminals) selected sums of money in one or a number of transactions, the stored money value being updated at each transaction.

Preferably the transaction device is an electronic device, microprocessor-controlled, comparable in size to a credit card, or to a product calculator, having a keyboard with numerical and function keys and a display, and a plug and socket or the like. A sum of money may be issued to the device at a bank by plugging the device into a terminal at the bank and appropriately operating the keys of the device and/or keys of the bank terminal. Each transaction device is uniquely defined by a code number disclosed only to the authorised user. Each transaction then requires the authorised user to enter his code number on his keyboard in order to safeguard against fraud.

The memory of the device is preferably non-volatile, such as a bubble memory, to avoid loss of the stored money value upon interruption of the power supply. Conveniently, the power supply may comprise solar cells, so as to achieve a 99 years life expectancy. The device may also incorporate a memory facility to store the identity code numbers of stolen, lost or the like devices and be arranged to refuse a transaction with any such devices.

Upon issuing a device with a money value, the issuing bank debits the users account accordingly. In order subsequently to effect a transaction between two devices, the two devices may either be plugged directly together, or they may be coupled over the telephone system by each of the two devices being plugged into a telephone modem. Suppose the user A of one device wishes to purchase an item or otherwise pay a sum to the user of the other device B. A uses his device to key in this code number and depress a "transfer" key: B also keys in his code number on his device and depresses his transfer key. Assuming both code numbers are valid, A enters the date and again depresses his transfer key, and B depresses a "confirmation" key on his device. Then A keys in the sum required to be transferred to B and depresses his transfer key, this sum being displayed on his device and then on B's device. B finally verifies the sum on his display and depresses his confirmation key. The transfer is thus effected and the stored money value on A's device is debited accordingly and the stored money value on B's device likewise increased. A control key on each device provides a display of the stored money value at that time.

The transaction device may be used to pay public utilities or other bills, by plugging the device into a terminal at a paying office or into a

telephone modem, the telephone number of the paying office then being dialled. The user keys on his code number, the date, the amount to be paid, a bank code and his account number.

A plurality of transactions can be held in a memory of the device for recall when required. For example, at a convenient time the user takes his device and plugs it into his bank terminal (perhaps outside the bank) or couples it to the bank terminal by telephone, having plugged his device into his telephone modem. The transactions stored in the memory are then fed into the central EFT (electronic funds transfer) network of the banking system.

An employee may have his salary paid directly into his transaction device. He may then deposit a selected sum at any location of the EFT network, whether inside or outside a bank or at a supermarket, for example. Likewise for withdrawals, a user can at any location of the EFT network transfer a requested sum from his bank account to his transaction device, having satisfied the bank as to his identity code number and his authorised credit.

The transaction device and its mode of use with various terminals (at banks, supermarkets, paying offices etc) either directly or over the telephone, makes for a fundamental change in the present banking system. Basically, it calls for a reduction in the requirement for current accounts and increases the requirement for savings and deposit accounts. Mainly, however, a massive saving in the handling of cheques within the banking system is enabled and a highly convenient mode of payment is made available to users.

100 CLAIMS

1. A transaction device which is a portable electronic device capable of storing therein data representing a money value and of transferring to or from like devices or other terminals data representing selected sums of money in one or a number of transactions, the stored data being updated at each transaction to represent the updated money value.

2. A transaction device as claimed in claim 1, comprising a keyboard with numerical and function keys, and a visual display.

3. A transaction device as claimed in claim 1, comprising a data input/output for connection to a like device or other terminal for a said transfer of data representing a selected sum of money, a keyboard for keying in a sum to be transferred from the device, a visual display arranged to display the sum keyed-in for transfer, and a function key for effecting the transfer of the keyed-in sum from that device.

4. A transaction device as claimed in claim 3, in which, for the transfer to that device from a like device or other terminal of data representing a sum of money, the visual display is arranged to display a sum which has been keyed-in on the keyboard of said like device or other terminal to which it is temporarily connected, one of the

function keys of its own keyboard being then operable to effect the up-dating of the data stored by itself.

5 5. A transaction device as claimed in any one of claims 2 to 4, in which one of the function keys is operable for causing the visual display to display the sum currently stored by the device.

10 6. A transaction device as claimed in any one of claims 2 to 5, in which the device is arranged to be enabled, prior to any said transfer, by keying-in

an identifying code number.

15 7. A transaction device as claimed in any preceding claim, comprising a memory effective to store a plurality of said transactions carried out on the device.

8. A transaction device as claimed in any preceding claim, comprising solar cells for powering the device.

20 9. A transaction device substantially as herein described.

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